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<u>Claims</u>

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1	1. A method for protecting a plant against an environmental stress,		
2	said method comprising the steps of:		
3	(a) producing a transgenic plant cell comprising a recombinant protein		
4	kinase (PK) domain-containing gene integrated into the genome of said transgenic		
5	plant cell and positioned for expression in said transgenic plant cell, said PK		
6	domain-containing gene being capable of increasing the level of tolerance to an		
7	environmental stress; and		
8	(b) growing a transgenic plant from said plant cell, wherein said PK		
9	domain-containing gene is expressed in said transgenic plant.		
1	2. The method of claim 1, wherein said environmental stress is		
2	dehydration.		
1	3. The method of claim 1, wherein said environmental stress is excess		
2	salinity.		
1	4. The method of claim 1, wherein said environmental stress is a		
2	temperature stress.		
1	5. The method of claim 1, wherein said plant is protected against		

multiple stress conditions.

temperature stress.

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1	6. The method of claim 1, wherein the expression of said PK domain-		
2	containing gene activates the expression of a stress-protective protein.		
1	7. The method of claim 1, wherein said PK domain-containing gene is		
2	constitutively expressed in said transgenic plant.		
1	8. A method for protecting a plant against an environmental stress,		
2	said method comprising the steps of:		
3	(a) producing a transgenic plant cell comprising a recombinant calcium-		
4	dependent protein (CDPK) gene integrated into the genome of said transgenic		
5	plant cell and positioned for expression in said transgenic plant cell, said CDPK		
6	gene being capable of increasing the level of tolerance to an environmental stress;		
7	and		
8	(b) growing a transgenic plant from said plant cell, wherein said CDPK		
9	gene is expressed in said transgenic plant.		
1	9. The method of claim 8, wherein said environmental stress is		
2	dehydration.		
1	10. The method of claim 8, wherein said environmental stress is		
2	excess salinity.		
1	11/ The method of claim 8, wherein said environmental stress is a		

1	12. The method of claim 8, wherein said plant is protected against		
2	multiple stress conditions.		
1	13. The method of claim 8, wherein the expression of said CDPK		
2	gene activates the expression of a stress-protective protein.		
1	14. The method of claim 8, wherein said CDPK gene is constitutively		
2	expressed in said transgenic plant.		
1	15. A method for protecting a plant against an environmental stress,		
2	said method comprising the steps of:		
3	(a) producing a transgenic plant cell comprising a recombinant CaM-K		
4	gene integrated into the genome of said transgenic plant cell and positioned for		
5	expression in said transgenic plant cell, said calcium/calmodulin-dependent protein		
6	kinase (CaM-K) gene being capable of increasing the level of tolerance to an		
7	environmental stress; and		
8	(b) growing a transgenic plant from said plant cell, wherein said CaM-K		
9	gene is expressed in said transgenic plant.		
1	16. The method of claim 15, wherein said CaM-K gene comprises a		
2	mammalian CaM-K gene.		
1	17. The method of claim 15, wherein said environmental stress is		
2	dehydration.		
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1	18. The method of claim 15, wherein said environmental stress is		
2	excess salinity.		
1	19. The method of claim 15, wherein said environmental stress is a		
2	temperature stress.		
1	20. The method of claim 15, wherein said plant is protected against		
2	multiple stress conditions.		
1	21. The method of claim 15, wherein the expression of said CaM-K		
2	gene activates the expression of a stress-protective protein.		
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1	22. The method of claim 15, wherein said CaM-K gene is		
2	constitutively expressed in said transgenic plant.		
1	23. A method for protecting a plant against an environmental stress,		
2	said method comprising the steps of:		
3	(a) producing a transgenid plant cell comprising a combination of at		
4	least two genes selected from the group consisting of a recombinant PK domain		
5	gene, a recombinant CDPK gene and a CaM-K gene, each of said genes being		
6	capable of increasing the level of tolerance to an environmental stress, each of said		
7	genes being integrated into the genome of said transgenic plant cell and positioned		
8	for expression in said transgenic plant cell; and		
9	(b) growing a transgenic plant from said plant cell, wherein a		
10	combination of at least two of said genes is expressed in said transgenic plant.		

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1	24. A transgenic plant comprising a recombinant PK domain gene
2	integrated into the genome of the transgenic plant and positioned for expression in
3	the plant, wherein said PK domain gene is capable of increasing the level of
4	tolerance, on a plant expressing said PK domain gene, to an environmental stress.
1	25. A seed from a transgenic plant of claim 24.
1	26. A cell from a transgenic plant of claim 24.
1	27. A transgenic plant comprising a recombinant CDPK gene
2	integrated into the genome of the transgenic plant and positioned for expression in
3	the plant, wherein said CDPK gene is capable of increasing the level of tolerance,
4	on a plant expressing said CDPK gene, to an environmental stress.
1	28. A seed from a transgenic plant of claim 27.
1	29. A cell from a transgenic plant of claim 27.
1	30. A transgenic plant comprising a recombinant CaM-K gene
2	integrated into the genome of the transgenic plant and positioned for expression in
3	the plant, wherein said cam-K gene is capable of increasing the level of tolerance,
4	on a plant expressing said CaM-K gene, to an environmental stress.
1	31. A seed from a transgenic plant of claim 30.

1	. A call from a transpania ulant of alaim 21	
1	32. A cell from a transgenic plant of claim 31.	
1	33. A transgenic plant comprising a recombinant CDPK gene, PK	
2	domain gene, CaM-K gene, or any combination thereof integrated into the genome	
3	of the transgenic plant cell and positioned for expression in said plant cell, the	
4	CDPK, PK domain, and CaM-K genes being capable of increasing the level of	
5	tolerance to an environmental stress, wherein said DNA is expressed in said	
6	transgenic plant.	
1	34. A seed from a transgenic plant of claim 34.	
1	35. A cell from a transgenic plant of claim 34.	
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1	36. Substantially pure DNA encoding a PK domain polypeptide, said	
2	polypeptide being capable of increasing the level of tolerance to an environmental	
3	stress in a transgenic plant.	
1	37. The DNA of claim 36, wherein said DNA encodes a polypeptide	
2	which confers tolerance to dehydration.	
1	38. The DNA of claim 36, wherein said DNA encodes a polypeptide	
2	which confers tolerance to salinity.	
1	39. The DNA of claim 36, wherein said DNA encodes a polypeptide	
2	which confers tolerance to a temperature stress.	
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1	40.	The DNA of claim 36, wherein said DNA comprises a nucleic	
2	acid sequence substantially identical to the nucleic acid sequence shown in Fig. 5		
3	(SEQ ID NO:	1).	
1	41.	The DNA of claim 36, wherein said DNA is operably linked to an	
2	expression con	trol region.	
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1	S 42.	The DNA of claim 41, wherein said expression control region	
2	comprises a a j	promoter.	
1	43.	The DNA of claim 42, wherein said promoter is a constitutive	
2	promoter.		
1	44.	The DNA of claim 43, wherein said promoter is an inducible	
2	promoter.		
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1	45.	A cell which includes the DNA of claim 36.	
1	46.	The cell of claim 45, wherein said cell is a plant cell.	
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1	47.	A substantially pure PK domain polypeptide capable of increasing	
2	the level of tol	erance to an environmental stress in a transgenic plant.	
_		crance to an environmental peress in a transgeme plant.	

- 1 48. The polypeptide of claim 47, wherein said polypeptide comprises
- 2 an amino acid sequence substantially identical to the amino acid sequence shown
- 3 in Fig. 5 (SEQ ID)(6:2).

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